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Ku-Band Intensity Interferometer

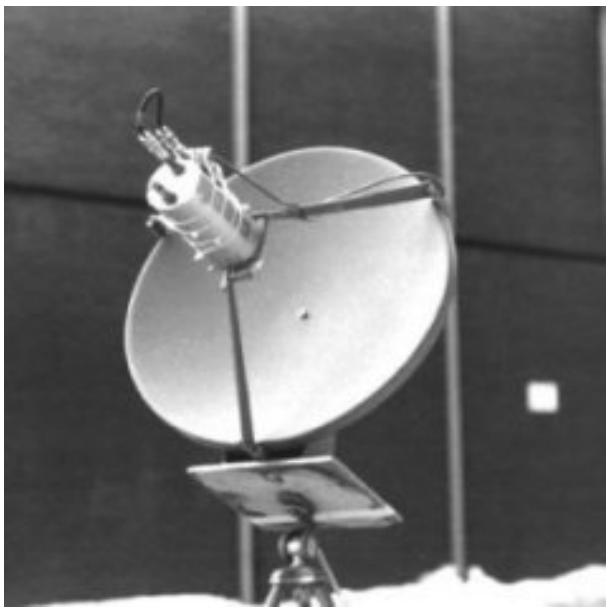
This system is currently under construction--perhaps ready by the end of the winter.

Other Interests

1. Development of **Small Radio Telescopes** suitable for student-oriented research at the undergraduate level. A 'book' entitled "Radio Astronomy Projects" is available from Radio-Sky Publishing Co., RadioSky@radiosky.com Link to Radio-Sky Publishing. See the link at the end of this Home-page for the Table of Contents of this book.

The photograph shows a small radio telescope using a 0.7 metre dish. An LNB (Low Noise Block Converter) is mounted at the focal point. The output from the LNB goes to a wideband I.F. (Intermediate Frequency) amplifier mounted on the rear surface of the di sh. The bandwidth of the system is about 500 MHz. The output of the I.F. amplifier is rectified, using a semiconductor diode, and the resulting D.C. (direct current) voltage is fed to a sensitive voltmeter. The system is equivalent to

a 1-pixel imager. Th e telescope gives a very clear indication of microwave emission from the Sun, as well as microwave emission from the human body. Microwave emission from the human body comes as a surprise to most of us.



2. **The Galileo Case**; what actually happened?. The most plausible (in my view) account of the 'case' is given in a recent book (published in 1994) by Annibale Fantoli with the title "Galileo: For Copernicanism and For the Church". The book is available from The University of Notre Dame Press, ISBN 0-268-01029-3. For some thoughs on the Galileo event that are somewhat iconolastic and somewhat plausible, see **Dr. Thomas Schirrmacher's site**.

3. **"Understanding the understanding of Physics"**. Somewhat decoded, there could be a question like this: "What am I doing when I am understanding Physics?" Or, perhaps, "What am I doing when I am understanding Thermodynami cs?" The question is being approached from a point of view developed in Bernard Lonergan's INSIGHT.

4. **Development of research projects for undergraduates and the publishing thereof.** Some of the projects would be of interest to high-school seniors as well. Currently, there are several projects under development:

(a). Monitoring background gammas at ground-level for several months for possible correlation with solar activity.

(b). Monitoring the terrestrial magnetic field at ground-level for several months for possibly interesting changes, including possible correlations with solar activity.

(c). Monitoring VLF (Very Low Frequency) terrestrial radio propagation for possible correlation with solar disturbances.

5. **Amateur radio** as an experimental environment; I hold VE1WPL

6. **Development of VERY user-friendly tutorials for IRAF: Image Reduction Analysis Facility.** This is a very comprehensive image-processing and analysis software package available from NOAO in Tucson, AZ, FREE to educationa l institutions...what a deal! For further information, email to iraf@noao.edu. Thus far, I have produced several tutorials, with a total page-count of about 500. The most recent tutorial gives 'blow-by'blow' coaching on the Examples in the IRAF Help files . This tutorial was part of an Advanced Experimental Physics Course over a two-year period and seemed to work well; very little additional input is needed by the students. Hard copies are available (for the price of photocopying and mailing) --simply email me if interested.

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- **List of Publications**
- Please look at my book **Radio Astronomy Projects (First Edition)** (table of contents, comments & reviews, errata, purchasing, etc.)
- Please look at the second edition of my book **Radio Astronomy Projects (Second Edition)** (released in 2003)
- The 3rd edition of **Radio Astronomy Projects (Third Edition)**, updated and expanded, will be ready by the end of 2005. Check with the publisher for further details.
- Some **links** to sites useful to amateur radio astronomers.

Some amateur radio astronomy projects

- **Dialogue on Radio Telescope Receivers**
- **Height of the Ionized Upper Atmosphere**
- **Establishing a Terrestrial Magnetic Field Observatory**
- **Building a Radio Telescope in Safford, AZ**
- **Meteors by Radio**
- **Classroom Radio Telescope**
- **Trans-Atlantic Beacon on 2 meters**

Radio Astronomy Web Ring

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